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NOAA WEEK

U.S. DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration

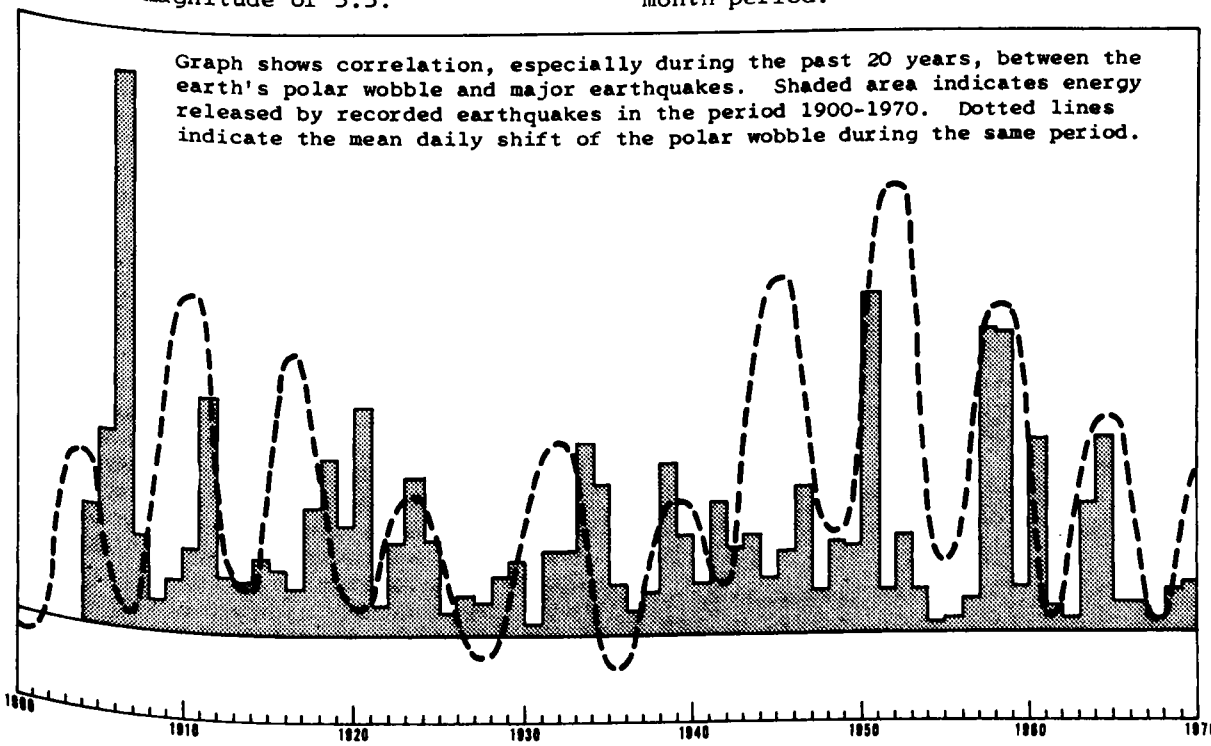
NEIC Records Earthquake At 6.7 on Richter Scale

The NOAA National Earthquake Information Center pinpointed the major earthquake of Feb. 9 at 26 miles north of downtown Los Angeles with a magnitude of 6.7 on the Richter Scale. This shock was the strongest in the Los Angeles area since 1933 when a 6.3 magnitude earthquake caused 115 deaths and 40 million dollars damage in Long Beach, Calif., and surrounding counties. The Feb. 9 earthquake was centered in the San Gabriel mountains near towns of Newhall and Saugus. This area has a number of active faults mapped, including the Soledad and Pole Canyon Faults. A portion of the San Andreas Fault zone runs north of the epicenter. The strongest aftershock recorded at NEIC headquarters occurred at about 11 a.m. EST and registered at a magnitude of 5.5.

Major Quakes May Relate To Shift in Polar Axis

With the "wobble" in the earth's north-south axis of rotation reaching the peak of its seven-year cycle in 1971, seismologists are alert for a possible increase in major earthquakes. New studies during the past three to five years of the so-called polar wobble have heightened interest in the possible effects it may have on the earth's structure. Charles A. Whitten, chief geodesist of the National Ocean Survey, said that "the year 1971 should be a critical year. This is the year in the seven-year cycle of the earth's wobbling when the daily shift of the pole reaches its maximum."

The earth wobbles slightly as it spins in space and as it does so, its axis of rotation shifts. The maximum range of the polar shift is 72 feet over a 14-month period.



Graph shows correlation, especially during the past 20 years, between the earth's polar wobble and major earthquakes. Shaded area indicates energy released by recorded earthquakes in the period 1900-1970. Dotted lines indicate the mean daily shift of the polar wobble during the same period.

NOAA Plane Provides Quick Service for Apollo 14 Launch

The National Weather Service's Spaceflight Meteorology Group provided weather support from beginning to end of the Apollo 14 moon flight. When rain and thunderstorms approached the launch site at scheduled liftoff time on January 31, other NOAA elements came to the assistance of the space weather forecasters. The National Hurricane Center provided special satellite photographs and film loops from the Applications Technology Satellite to aid in analysis of critical weather features, including visibility, wind, and sea conditions in the area where an aborted landing would occur if the booster stage failed.

The onset of bad weather that forced a 40-minute delay in the liftoff brought NOAA's Research Flight Facility unexpectedly and prominently into the launch procedure and the international spotlight.

RFF, a division of the Environmental Research Laboratories, was on a research flight for Dr. Peter Kuhn of ERL's Atmospheric Physics and Chemistry Laboratory. Kuhn, working under a National Aeronautics and Space Administration contract, was investigating the exhaust plume of Apollo 14's Saturn 5 rocket and its effects on the adjacent atmosphere.

The RFF flight crew, led by Dr. James McFadden, was expected to fly a difficult, extremely precise pattern that would enable Kuhn and his technicians to make their measurements at an altitude of 12,000 feet as the launch vehicle roared past not quite four miles away. Since a few seconds' deviation could make the difference between success and failure of the project, the highly instrumented DC-6 was put through ten practice runs in the final 24 hours before the scheduled launch.

When threatening clouds moved in from the northwest and a postponement was called eight minutes before scheduled launch, the RFF crew was asked by Ernest Amman, MIC of the Spaceflight Meteorology Group's Cape Kennedy Section, to observe the weather situation. (The DC-6 happened to be where the critical weather was and had qualified meteorologists and instruments aboard.)

According to McFadden, the flight's scientific coordinator: "The weather really got bad in the last 20 minutes before the scheduled launch. The first squall line stretched as far as the eye could see, and cloud tops were at 12,000 to 15,000 feet. There was a clear area to the north and a secondary squall line with tops at 10,000 to 12,000 feet. To the south it was clear. We flew through and just above the cloud tops, measured altitudes, winds, temperature, and dew point. The turbulence was mild. We also passed information on movement of the system and cloud life cycles to the space flight director through Amman's group."

A NASA C-45 aircraft, flying at cloud base (4,000 feet), provided additional data including atmospheric electricity conditions. For electric field measurements, the C-45 carried instruments provided by Dr. Heinz Kasemir of APCL. Thus, the forecasters were able to determine that the lightning and wind hazards had passed, and the launch took place, despite the fact that rain was falling on the viewing stands three-and-a-half miles to the west.

The DC-6 then resumed its primary mission, but under more difficult conditions than would have been encountered under clear skies.

Flying on instruments and without visible landmarks, pilot Fred Werley reached the "initial point" of the flight path right on schedule at T minus 135 seconds. Using TACAN navigation transmissions from Patrick Air Force Base, and distance measuring equipment and a ground speed indicator aboard the aircraft, Werley, navigator Jack Lubin, and other flight crew members sailed from checkpoint to checkpoint at 15,000 feet altitude, some 2,000 or 3,000 feet above the clouds.

Kuhn and his technicians crouched at the portside windows, depending on RFF's navigational and flying ability to "bring the rocket" out of the cloud bank directly in front of the cameras and radiometers.

Said Lubin: "I was in agony waiting for that rocket to show up".

At T plus 51 seconds, as prompt as a Japanese train, the Apollo-Saturn dramatically emerged in full straight-on view. Fingers crooked, instruments clicked, the aircraft veered as programmed to avoid a rocket-tracking beam, and in seconds the whole show was over for the Environmental Research Laboratories.

Hallgren Is Head U.S. Delegate To Planning Meetings in Geneva

Dr. Richard E. Hallgren, NOAA Assistant Administrator for Environmental Systems (left), will head the U.S. delegation to the meetings of the Tropical Experiment Council and the Tropical Experiment Board, to be held in Geneva, Switzerland, from February 17 to 24. The Council and the Board will be planning and developing the program for the tropical oceanographic and meteorological experiment to be conducted in the Atlantic Ocean during 1974. Other members of the U.S. delegation will be Dr. Verner Suomi, University of Wisconsin; Gordon D. Cartwright, science officer of the U.S. mission in Geneva; Norman L. Durocher, National Aeronautics and Space Administration; Dr. Douglas Sargeant, Special Assistant to the NASA Assistant Administrator for Environmental Systems; Dr. Michael Wallace, University of Washington; and Dr. Fred White, National Science Foundation.

Senate Hearing Held for NOAA Nominees

Dr. Robert M. White, Howard W. Pollock, Dr. John W. Townsend, Rear Admiral Don A. Jones, and Rear Admiral Harley D. Nygren appeared before the Senate Commerce Committee on Feb. 9 at hearings pending their confirmation to top NOAA positions. Presiding was Senator Ernest F. Hollings of South Carolina.

Sossamon and Baker Become Alaska OIC's

Two new officials in charge have been selected to head Weather Service Offices in the Alaska Region. John Sossamon will head the office at Shemya, Alaska. His experience includes tours of duty with the Army and Air Force, and NWS offices in Asheville, N. C.; Nome, Barter Island, and Anchorage, Alaska. Charles Baker will head the Nome, Alaska, Weather Service Office. Mr. Baker's experience includes service with the NWS at Eugene, Oreg.; Bethel, Yakutat, Juneau, and Cold Bay, Alaska. He has been stationed at Alaska Region headquarters for the past four years.

Study Shows Prospects Bright For FPC as Food Additive

Favorable prospects for using various forms of fish protein concentrate (FPC) as an additive in foods for the U.S. market have been indicated in a study by Cornell University researchers. The study showed the present market potential for protein ingredients in 16 major food product categories to be about 3.1 billion pounds of protein annually. Dairy products, baked goods, pet foods, and processed meat products account for 86 percent of this potential, and a substantial increase in demand for protein ingredients is seen in this decade.

Philip M. Roedel, Director of NOAA's National Marine Fisheries Service, sponsors of the study, said: "This work shows that the use of fish protein concentrate to fill at least part of the growing U.S. demand for protein is a realistic possibility, especially if certain desirable characteristics, such as solubility for use in beverages, can be developed in the product." Current regulations prohibit the use of FPC in manufactured foods so modification of the rule will be necessary before the valuable protein concentrate can be used to full advantage. FPC is now best known as a nearly white, odorless, and tasteless powder made from whole fish, and containing about 80 percent high-quality animal protein. The remainder is largely calcium, phosphorus, and other nutritionally important minerals. A demonstration plant which could produce up to $7\frac{1}{2}$ tons of FPC on a 24-hour basis is scheduled to begin operations in Aberdeen, Wash., early in 1971. In August of last year, the Food and Drug Administration approved the use of herring and menhaden in producing FPC. Previously only hake and"hake-like fishes" were approved.

Copies of the Cornell report are available from the National Center for Fish Protein Concentrate, National Marine Fisheries Service, Regents Drive, College Park, Md. 20740.

Weickmann Wins Leningrad University Medal

Dr. Helmut K. Weickmann, Director of ERL's Atmospheric Physics and Chemistry Laboratory in Boulder, has been honored with the 150th Anniversary Medal of Leningrad University for his work in organizing international conferences on cloud physics and related subjects.

Navy Ecology Package Turned Over to NODC

A coastal ecology data package of major importance, previously classified for military use only, has been presented to the Environmental Data Service's National Oceanographic Data Center (NODC) by the U.S. Naval Oceanographic Office. The data collection began about 20 years ago under the direction of the Navy's Nearshore Survey Division, primarily for possible defense of harbors along U.S. coastlines, and also includes a wealth of material gathered by scientists of the National Ocean Survey, NOAA, and non-government oceanographers working under Office of Naval Research contracts.

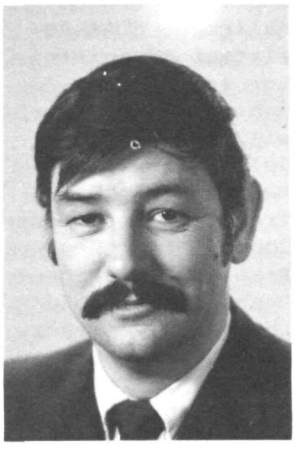
Essentially, the documentation portrays the ecology--plankton content, water temperatures and salinity, sediment and mineral content, current flow, and structure, and composition of the seafloor--of harbor areas at Charleston, S.C.; Penobscot Bay, Me.; Buzzards Bay Light Station, Mass.; Mayport, Fla.; New York Harbor; and Chesapeake Bay. The data also offers considerable information about harbor and coastal waters off Los Angeles and San Francisco, Calif.; the Columbia River and Puget Sound; and waters on both sides of the Canal Zone and offshore Puerto Rico.

Not only will this bonanza of undersea information provide today's scientific researchers with a basis for comparison of their findings with older information, but the data may well reveal changes in quantities or types of pollution now present in coastal waters.

All the temperature and salinity data are being processed onto magnetic tape to make them readily available for automatic data handling. The geological and biological data will be maintained at NODC in manuscript form, and copies will be available. Some of the data--specifically on Puget Sound, the Columbia River, San Francisco Bay, Los Angeles Harbor, Mayport (Fla.), Chesapeake Bay, Narragansett Bay, Buzzards Bay, and Casco Bay--are now ready for release.

Robert V. Ochinero, NODC Acting Director, indicated that additional data will be processed by NODC-NOAA as they are received from the Navy, and he anticipates that much of the material can be made available to the public before the end of 1971. EDS' announcements of new details concerning the data will be published as they become available.

Page Becomes Project Leader To Develop New Finance System



A. Newton Page, chief of the Management Systems Division in Adtech, began a new assignment on Jan. 25 as leader of a project to develop a new NOAA cost accounting and budgeting system. In this effort, Mr. Page will lead a team of system accountants, budget analysts, and management and system analysts in designing the systems and procedures required to implement the cost accounting and budgeting system recently approved in concept by the General Accounting Office. The team will be striving for a July 1, 1972, implementation date for the improved system. During the course of the Project, Mr. Page plans a number of sessions with representatives of the major line components to obtain suggestions and to review the progress of the work. In addition, it is anticipated that members of the team will be drawn from both headquarters and field locations, as well as from the Department of Commerce. By these means, Mr. Page hopes to develop a system highly responsive to the needs of all users of NOAA accounting and budgeting information. The Project has received the support and encouragement of both the Department of Commerce and the NOAA Acting Administrator, and is one of the highest priority tasks of the Adtech organization for the coming year. Mr. Page and his project group will report directly to T.P. Gleiter, Assistant Administrator for Administration and Technical Services. They will be housed in space in the North Bethesda Office Building complex on Rockville Pike.

(continued)

Further information concerning special requests or reproduction of the original documents may be obtained from the Data Services Branch, NODC, Environmental Data Service, NOAA, Department of Commerce, Rockville, Md. 20852.

Dr. White, Mr. Eckles Tour NMFS Facilities in Massachusetts

Robert Learson, research chemist, points out differences in the characteristics of one of a number of species of crabs being studied at the Gloucester, Mass., technological laboratory. Behind Mr. Learson is Louis Ronsivalli, Acting Laboratory Director. On his left are Dr. Robert M. White, NOAA Acting Administrator; John Holston, Associate Director of the NMFS Northeastern Region; and Howard Eckles, Assistant to Dr. White for Marine Affairs.

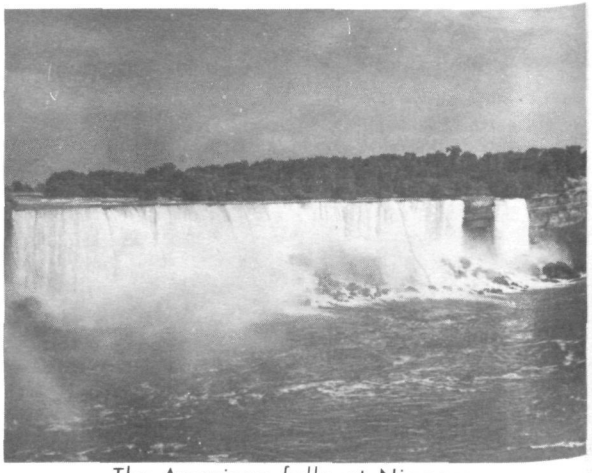
Dr. Robert M. White, NOAA Acting Administrator, visited the Northeast Region of the National Marine Fisheries Service recently to view the facilities and to meet members of the commercial fishing industry. Dr. White and Howard H. Eckles, his Assistant for Marine Affairs, accompanied NMFS Regional Director Russell T. Norris on an inspection of the Boston Fish Pier and discussed conditions with Thomas A. Fulham, President, Boston Fish Market Corp., and Hugh F. O'Rourke, Coordinator, Massachusetts Seafood Council. They also visited the Service's Market News office on Commonwealth Pier. Included in the agenda were visits to several NMFS installations at Gloucester. During a luncheon at the Fishery Products Technology Laboratory, Dr. White discussed industry problems with Salvatore J. Favazza, Executive Secretary, Gloucester Fisheries Commission; James D. Ackert, Executive Secretary, New England Fisheries Association, Inc.; Lee Harrington, President, Mass. Coastal Seafood, Inc.; and Edward E. McCollum, Jr., Ocean Crest Seafoods, Inc., of Gloucester. Howard W. Nickerson, Executive Director of Seafood Dealers Association of New Bedford, represented the New Bedford fishing industry. Among topics discussed with Dr. White were foreign fishing, tariffs on fishery products, haddock and yellowtail flounder quotas, adequate labeling of fishery products, and other possibilities for Federal assistance to the fishing industry. Following the luncheon, Dr. White, along with employees of the NMFS Regional Office, toured the Technology Laboratory and viewed research on the development of new fishery products. Later, they visited the O'Donnell-Usen Seafood Kitchens in East Gloucester to acquaint Dr. White with the continuous inspection service being provided by NMFS.

Lake Survey Center Engineers Study "Turned Off" Niagara Falls

An aerial view showing both the American (at left) and Canadian Falls (upper right).

The majestic beauty of Niagara Falls--honeymooners' paradise and Mecca for tourists--is well known. What may not be well known is that this beauty is ensured by an international agreement. On February 27, 1950, the United States and Canada entered into an International Treaty to set up rules and regulations on the use and preservation of this scenic wonder. It was agreed, among other things, that the flow over the Falls during the height of the tourist season (April through September 15th) must not be reduced to less than 100,000 cubic feet per second from 8 o'clock in the morning until 10 o'clock at night. At other times the hydroelectric plants, so vital to the economy of each country, are free to harness more of the mighty energy created by the Falls. The power generated by these tumultuous waters is used to provide a source of low-cost electricity both for residential and commercial use.

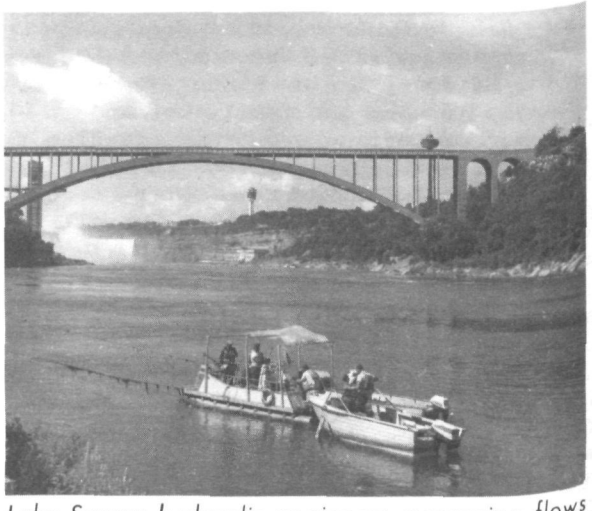
Several times throughout the years, large portions of rocks, especially on the American side, have broken off in damaging rockslides. It was feared that eventually this would not only impair their beauty, but in time might even destroy them. For this reason, it was mutually agreed to "turn off" the American Falls (by diverting them to the Canadian side) so that engineers and geologists could study the rock formations and see what could be done to keep them from deteriorating. On June 12, 1969, the thunder of these Falls stilled to a soft whisper and then died entirely as



The American falls at Niagara.

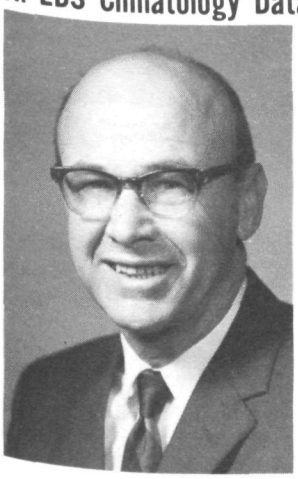
the cofferdam built upstream for the purpose diverted the water to the Horseshoe Falls on the Canadian side. This was man's first attempt to stop the flow, though nature had effectively cut it down to a trickle several times with ice jams.

Lake Survey Center and other U.S. engineers and geologists with Canadian cooperation thus began the major engineering project to save the Falls with all their power and beauty for future generations. After about a six-month "shut-off" the American Falls were returned to their original bed. Studies of the data collected are still going on and will continue for some time to come. Meanwhile, both Falls are again the magnet for honeymooners and tourists.



Lake Survey hydraulic engineers measuring flows in the Niagara River.

Denmark Briefs Illinois Agriculturists On EDS Climatology Data Availability



The beneficial effect of a cooperative association between NOAA Regional Climatologists and local agricultural interests was demonstrated recently in Illinois, when State Climatologist W. L. Denmark participated in proceedings of the Illinois Canners School for growers, canners, fieldmen, and plant operators. He discussed data availability at the school meetings, which were held for three days in Urbana. Mr. Denmark customarily works closely with Illinois agriculturists, especially in the consideration of methods for using growing degree days in the labeling of hybrid seed corn.

Congratulations to Dayton NWS Staff

The time-shared computer upper-air station at WSMO Dayton, Ohio, has not had an error recorded against it in 545 radiosonde flights between January 31, 1970 and October 31, 1970. This perfect record is still going strong with no errors yet.

Staff members are Observations Supervisor David King, and Weather Observing Specialists Charles R. Hansen, Eugene E. O'Reilly, and Forrest E. Varble.

SDC Received 280,000 Seismograms in '70

More than 280,000 seismograms were received in 1970 by the NOAA Seismological Data Center in Asheville, N. C., from seismological stations throughout the world. The Environmental Data Service facility supplied 2,546,836 copies of these seismograms to seismologists in numerous countries. Of these, all but 6,000 were on microfilm. Most of the seismograms were furnished by stations of the worldwide standard seismological network.

Two NMFS Films Nominated for Awards

The United States Information Agency has informed the National Marine Fisheries Service that an intergovernmental agency audio-visual committee has selected two NMFS films, "Sockeye Odyssey" and "The Biologist and the Boy," as government nominees for the 1971 Golden Eagle Award.

Thompson Assigned To Aid Dahomey Fishing Industry

Dr. Richard B. Thompson, of the National Marine Fisheries Service's Seattle Biological Laboratory, has accepted a 30-day assignment in Cotonau, Dahomey, to assist the Government of Dahomey in developing a fishery management program on Lake Nokoue. Dr. Thompson will be concerned primarily with the effects of a dam construction project which will have a significant impact on salinity levels in Lake Nokoue. In addition, Dr. Thompson will make estimates of the biological productivity of the lake and advise the Government of Dahomey on methods of increasing the efficiency of the native fish traps. Dr. Thompson's trip is being conducted under the terms of an agreement between NMFS and the Agency for International Development.

NOAA Components Man Boat Show Exhibit

During the trade days prior to the opening of the New York National Boat Show held Jan. 20-31, William McKee, Marine Specialist, and G. L. Shak, User Services Representative, National Weather Service Eastern Region, visited the booths of radio manufacturers and retail marine suppliers to brief them on the planned frequency changes at some of the VHF-FM sites in the Eastern Region. VHF-FM posters and handouts were distributed for use at booths to promote the use and sale of VHF receivers. Shown manning the NOAA booth at the New York Boat Show are, left to right: Thomas Morgan, NWS, New York; Capt. Dewey Rushford, NOS, New York; William Montieth, NOS, Lake Survey Center, Detroit; Lt. Michael Kawka, NOS, Norfolk; and James Dailey, NOS, Washington, D. C.

Engineer, Design Working Group Seek To Improve NWS Offices

Samuel R. McCamant, a Human Engineer (Architect), has joined the Engineering staff at National Weather Service headquarters as a result of office design deficiencies cited in the Line Forecaster's Advisory Committee Report.

A design working group composed of Regional Operation Division Chiefs and Design Engineers met in Salt Lake City during the week of January 11 to exchange ideas and to develop a portfolio of guidelines, practical office layouts, procedures, and work environmental considerations. Their prime mission was to establish standards for Weather Service Forecast Office design, and to improve the human factor relationship--job satisfaction in today's meteorological society. Attending were, front row, left to right: Charles G. Knudsen, Eastern Region; Charles M. Woffinden, Central Region; George J. Littleton, NWS headquarters; Hazen H. Bedke, Western Region; Samuel R. McCamant and Stanley J. Lacy, NWS headquarters; and Dr. Edward D. Diemer, Alaska Region. Back row, left to right: O. R. Warner, Western Region; Steve Short, Pacific Region; Harold S. McCrabb, Southern Region; David R. Shephard, Alaska Region; Anthony Previte, Eastern Region; Chester Bowers, Southern Region; David B. Cook, Western Region; Wallace Okazaki, Central Region; Richard G. Anderson, Western Region; and LeGrande Lewis, Western Region. Not shown is LeRoy Reisberg, Chief, Assignment and Utilization Branch, GSA, Denver, Colo.

Deaths

Frank S. Farquhar, of Adelphia, Md., who retired last April after more than three decades with the government, died Jan. 31. Much of Mr. Farquhar's career was with the Coast and Geodetic Survey's Coast Pilot Branch. He last served as a technical writer with ESSA's Scientific Information and Documentation Division.

Lewis Hayes, who retired as meteorologist in charge of the Weather Bureau's office at Beckley, West Va., about five years ago, died Jan. 8 in Lake Wales, Fla. Mr. Hayes' other assignments were as meteorologist in charge at Wake Island, supervisory meteorologist in Honolulu, in Washington, D.C., and at Anchorage, Alaska. ..

Thomas A. Lawler, Weather Bureau employee who retired at Los Angeles in 1964, died Jan. 24, 1971. Mr. Lawler began his career in 1920 at a kite station at Ellendale, North Dakota. His other assignments were at Kansas City, Missouri; and Helena, Montana.

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National Oceanic and Atmospheric Administration

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